## TABLE 2.6
## PRELIMINARY SOUTH AND EAST BELTWAY EVALUATION CRITERIA

| ID# | ISSUES | DISCUSSION | METHOD OF MEASUREMENT |
|---|---|---|---|
| T.0 | TRAFFIC OPERATION FACTORS | | |
| T.1 | Traffic Flow and Congestion | Improving traffic flow and relieving congestion are objectives of any proposed transportation improvement. The extent to which this occurs can be estimated by determining relative improvements in daily vehicle hours traveled (VHT) which is an output of the transportation model. | Average annual time savings in hours from Economic Analysis using computer model. |
| T.2 | Through Traffic Around Lincoln | This criterion relates to the need to accommodate through traffic movements around the built-up area of the City. This would in turn relieve congestion on urban streets caused by existing and/or future traffic. | Volume of External to External trips in vehicle miles traveled using beltway from computer model. |
| T.3 | Future Traffic Demand | Sufficient infrastructure should be in place or planned to satisfy new traffic demand as a result of growth. This can be measured by determining the number and length of streets that would otherwise have an unacceptable Level of Service (LOS). | Not measured. Data not available. |
| T.4 | Future Freight & Truck Transportation | Improving freight and truck transportation to reduce automobile and truck conflicts is a concern in the community. This criterion would provide a measure of the extent to which truck traffic can be relocated. | Not measured. No separate truck data available. |
| T.5 | Congestion on Existing Arterials Within Developed Areas. | This criterion relates to impacts of a transportation improvement within the existing developed area of Lincoln. It is a measure of how much congestion is relieved by relocating internal traffic from the existing street system to outlying areas. | Not evaluated. Preliminary computer model results show little difference between alternatives |
| T.6 | Effective Life of Facility | This criterion relates to the amount of time that it would take for beltway or non-beltway improvement alternatives to become obsolete due to the facility reaching its theoretical capacity. | Not measured. All beltway alternatives should have excess capacity with future model runs. |
| T.7 | Number of Accidents | The reduction in Vehicle Miles Traveled (VMT) on the existing arterial street system should relate to a proportional reduction in traffic accidents. Accident rates for arterial streets are higher than accident rates for facilities like the beltway. Therefore, transferring traffic from the arterial streets to the beltway should result in an overall reduction in number of accidents. | Dollar value of annual accident savings from economic model. |
| T.8 | Disruption of Existing Street Network | Lancaster County and the City of Lincoln is built upon grid type street system with major streets every mile. This criterion identifies the extent to which the existing street system is impacted. | Not measured in Task 3, but measured in Task 4. Lane miles of existing section line roads eliminated or relocated. |
| C.0 | PROJECT COSTS | | |
| C.1 | Construction Cost | This criterion relates to only the cost of construction of the improvement in 1997 dollars and does not include cost for right-of- way | Estimated cost of Construction in 1996 dollars. |
| C.2 | Right-of-Way Costs | Right-of-way costs are estimated by assuming generalized costs per hectare (acre) of residential property versus farm property as well as costs for homes, businesses, and miscellaneous structures. | Estimated R/W costs based on cost/structure, measured from aerial photos and G.I. Surveys. |
| C.3 | Maintenance Costs | The cost of maintaining a new facility is an important consideration. Cost is determined by looking at historical maintenance costs involved in snow removal, pavement repair, landscaping and mowing, deicing and periodic inspection. | Cost per linear kilometer (mile) based on average maintenance costs in Nebraska for Freeway and principle arterials. |
| C.4 | Project Funding | This criterion refers to the ability of an alternative to qualify for new sources of funds over and above existing state/local resources. Revenue could be locally generated or earmarked from future state and federal resources. Use of existing state/federal resources could upset existing priorities. | Not measured in Task 3, but may be measured in Task 4. Likelihood of obtaining new revenue.<br>1 = Good |

## Table 2.6 (cont)

| ID# | ISSUES | DISCUSSION | METHOD OF MEASUREMENT |
|---|---|---|---|
| | | | 5 = Poor |
| S.0 | SOCIO ECONOMIC | | |
| S.1 | Impacts to Residences | This parameter included structures located within the 91 m (300 ft) ROW plus additional ROW for the interchanges. It was measured from the GIS layer of structures which contained structures present on the April 1995 aerial photography along with new houses observed from driving study area in April 1996. This was updated using 1997 photography and additional drive throughs. | Number of structures within ROW (takings). |
| S.2 | Impacts to Businesses | This parameter included commercial businesses in the study area as identified on the April 1995 blueline aerial photography. Farm and other home businesses were not included in the sum. This includes commercial businesses within 0.4 km (0.25 mi) either side of the centerline minus the area of the ROW. Source of the information is as described for the previous parameter | Number of businesses within ROW (takings)<br><br>Number of businesses within 0.4 km (0.25 mi). |
| S.3 | Impacts to Agricultural Land | This parameter was estimated based on interpretation of the April 1995 aerial photography. | Hectares (acres) of cropland within ROW |
| S.4 | Economic Development Opportunities | (not available at this time) | (to be determined) |
| S.5 | Impacts to Existing School District Lines | This is the estimated ROW requirement for the entire route which corresponds approximately to the property removed from the tax rolls. The beltway study area includes portions of Districts 145 (Waverly), 153 (Cheney), 152 (Rokeby), OR-1 (Otoe), 160 (Norris) and 1 (Lincoln).<br>This parameter was measured using School Attendance Area maps and estimates of the distribution of student populations provided by the school districts. Assuming that a beltway would divide portions of the districts, the area of the districts on the opposite side of the beltway from the school was measured and taken as a percentage of the total school attendance areas. | Hectares (acres) removed from the tax base. |
| S.6 | Impacts to non-tillable land | This parameter was estimated based on interpretation of the April 1995 aerial photography and spot checking fields to verify the interpretation. | Hectares (acres) of pasture, hayland and CRP land within ROW. |
| L.0 | LAND USE | | |
| L.1 | Impacts to Platted Subdivisions | Calculated from the GIS Constraints Map, this parameter was the number of platted subdivisions crossed by a beltway route. Information in the GIS included platted subdivisions on record in the County Assessors office as of April 1996.<br>Calculated from the GIS Constraints Map, this parameter was the number of hectares (acres) taken from platted subdivisions as described above. | Number of platted subdivisions crossed<br><br>Hectares (acres) of platted subdivisions within ROW |
| L.2 | Impacts to Parks and Recreation Areas | Calculated from the GIS Constraints Map which included the City's Parks and Rec layer, this parameter was the number of hectares (acres) taken from Wilderness Park. No other parks are affected by the remaining beltway routes. | Hectares (acres) of parkland within ROW |
| L.3 | Impacts to Golf Courses | Calculated from the GIS Constraints Map, golf course locations had been identified from maps provided by the City. | Hectares (acres) of golf courses within ROW |
| L.4 | Compatibility with future Land Use Plan | (to be determined) | (not available at this time) |
| L.5 | Minimize Barrier Effect | This parameter was the average distance between the beltway and the edge of the built up area as defined in the Comprehensive Plan/city limits. Average distance was determined based on measurements at Havelock, Adams, Holdrege, O, A, Van Dorn and Pioneers Streets on the east, and at Old Cheney, 70th, 56th, 40th, 27th Street on the south. | Average distance from built up area |

## Table 2.6 (cont)

| ID# | ISSUES | DISCUSSION | METHOD OF MEASUREMENT |
|---|---|---|---|
| L.6 | Trail System Enhancements | Calculated from the GIS Constraints Map, these trail locations had been identified from the City's Trails layer and maps provided by the City Parks and Recreation Department. | Number of hiker/biker trail crossings |
| E.0 | ENVIRONMENTAL | | |
| E.1 | Water Quality Impacts | Calculated from the GIS Constraints Map, these zone locations had been identified from maps provided by the Lincoln/Lancaster County Health Department. | Hectares (acres) of wellhead protection zones within ROW |
| E.2 | Air Quality Impacts | (to be determined) | (not available at this time) |
| E.3 | Drainage and Hydrology Impacts | Calculated from the GIS Constraints Map, streams had been identified from the City's Streams layer.<br><br>Calculated from the GIS Constraints Map, floodways had been identified from FEMA and FIRM maps.<br>Calculated from the GIS Constraints Map, the 100-year floodplain had been identified from FEMA and FIRM maps. | Number of stream crossings<br><br>Hectares (acres) of floodway within ROW<br>Hectares (acres) of 100-year floodplain within ROW |
| E.4 | Noise Impacts | This parameter was measured from the GIS layer of structures which contained structures present on the April 1995 aerial photography along with new houses observed from driving study area in April 1996. It includes 0.4 km (0.25 mi) on either side of the centerline minus the beltway ROW. | Number of structures within 0.4 km (0.25 mi) |
| E.5 | Riparian Corridors Impacts | Calculated from the GIS Constraints Map, streams had been identified from the City's Streams layer.<br>This parameter was estimated based on interpretation of the April 1995 aerial photography. Riparian areas were defined as wooded and non-wooded areas along streams and smaller drainages | Number of stream crossings<br><br>Hectares (acres) of riparian corridor within ROW |
| E.6 | Wetlands Impacts | Calculated from the GIS Constraints Map, wetlands had been identified from the City's Wetlands layer which was developed from the USFWS National Wetlands Inventory Maps. | Number of Mapped Wetlands within ROW. |
| E.7 | Natural Habitat Impacts | This parameter was determined by assigning quality weightings of 0 to 5 to parkland, stream crossings, riparian corridor, and wetlands factors. High quality was assigned based on the extent of woodlands along the stream crossings, the width of the park crossing, and the number of wetlands | Impacts to natural habitats within ROW (0-5) |
| E.8 | Cultural Resources Impacts | This factor applied to the three NRHP sites within the study area. Although none of the 23 routes do take NRHP property, SF1 runs along the Schrader site, and EF1 runs along the Stock Farm site. None of the routes abut the Ehler Round Barn.<br>This parameter was the number of other known cultural resources within the ROW that have not been assessed for eligibility of the NRHP, including all recorded sites listed in the Phase I Archeological/Cultural Resources Survey conducted for the project.<br>This parameter was the number of other potential cultural resources within the ROW, including all cemeteries, NSHS owned property in the study area, and some other older structures.<br>This parameter was the number of NRHP and other known cultural resources within 0.4 km (0.25 mi) of a beltway centerline, including all recorded sites listed in the Phase I Archeological/Cultural Resources Survey conducted for the project.<br>This parameter was the number of other potential cultural resources within 0.4 km (0.25 mi) of a beltway centerline, including all cemeteries, NSHS owned property in the study area, and some other older structures. | Number of National Register sites within ROW<br><br>Number of known cultural resources within ROW<br><br>Number of potential resources within ROW<br><br>Number of know resources within 0.4 km (0.25 mi)<br><br>Number of potential resources within 0.4 km (0.25 mi) |

## Table 2.6 (cont)

| ID# | ISSUES | DISCUSSION | METHOD OF MEASUREMENT |
|---|---|---|---|
| E.9 | Visual Impacts | This parameter was measured from the GIS layer of structures which contained structures present on the April 1995 aerial photography along with new houses observed from driving study area in April 1996. It includes 0.4 km (0.25 mi) on either side of the centerline minus the beltway ROW. | Number of structures within 0.4 km (0.25 mi) |
| | | Calculated from the GIS Constraints Map, this parameter was the number of platted subdivisions within 0.4 km (0.25 mi) of either side of a beltway centerline. Information in the GIS included platted subdivisions on record in the County Assessors office as of April 1996. | Number of platted subdivisions within 0.4 km (0.25 mi) |
| | | Calculated from the GIS Constraints Map which included the City's Parks and Rec layer, this parameter was the number of parks within 0.4 km (0.25 mi) of a beltway centerline. | Number of parks within 0.4 km (0.25 mi) |
| | | Calculated from the GIS Constraints Map, this parameter was the number of golf courses within 0.4 km (0.25 mi) of either side of a beltway centerline. Information on golf course locations was identified from maps provided by the City. | Number of golf courses within 0.4 km (0.25 mi) |
| | | Calculated from the GIS Constraints Map, this parameter was the number of trails within 0.4 km (0.25 mi) of either side of a beltway centerline. Information on trail locations had been identified from the City's Trails layer and maps provided by the City Parks and Recreation Department. | Number of hiker/biker trails within 0.4 km (0.25 mi) |